

CLAIMS

We claim:

- 1 1. A control circuit comprising:
2 a comparator having a first input for receiving an input signal and an
3 output for providing an output signal;
4 a reference voltage source coupled to a comparator second input; and
5 a feedback network coupled to the second input for providing a hysteresis
6 window.
- 1 2. The control circuit of claim 1, wherein the comparator is a high speed
2 voltage comparator.
- 1 3. The control circuit of claim 1, wherein the input signal comprises an output
2 signal of an IEEE 1394 compliant physical layer output driver circuit.
- 1 4. The control circuit of claim 1, wherein the output signal is coupled to a
2 glass fiber optical physical medium dependent sub-layer.
- 1 5. An optical transmitter control circuit comprising:
2 a comparator having a first input coupled to an output common mode
3 voltage of an IEEE 1394 PHY and an output coupled to an optical transmitter
4 input;
5 a voltage reference source coupled to a comparator second input; and
6 a feedback network coupled to the comparator second input.

- 1 6. The optical transmitter control circuit of claim 5, wherein the output
2 common mode voltage is provided by an IEEE 1394 PHY TPB+/- termination
3 network.
- 1 7. The optical transmitter control circuit of claim 5, wherein the comparator is
2 a high speed voltage comparator.
- 1 8. The optical transmitter control circuit of claim 5, wherein the voltage
2 reference source comprises a voltage divider.
- 1 9. The optical transmitter control circuit of claim 5, wherein the termination
2 network is coupled to the first input through a resistor.
- 1 10. The optical transmitter control circuit of claim 5, wherein the termination
2 network provides a differential pair common mode voltage signal.
- 1 11. The optical transmitter control circuit of claim 5, wherein the first input
2 comprises a negative input and the second input comprises a positive input.
- 1 12. The optical transmitter control circuit of claim 5, wherein the optical
2 transmitter input comprises a transmit enable bar input.
- 1 13. An optical transmitter control circuit coupled between an IEEE 1394 PHY
2 TPB+/- termination network and an optical transmitter comprising:
3 a comparator having a first input coupled to the termination network and
4 an output coupled to an optical transmitter input;
5 a voltage reference source coupled to a comparator second input; and
6 a feedback network coupled to the comparator second input.

1 14. The optical transmitter control circuit of claim 13, wherein the comparator
2 is a high speed voltage comparator.

1 15. The optical transmitter control circuit of claim 13, wherein the voltage
2 reference source comprises a voltage divider.

1 16. The optical transmitter control circuit of claim 13, wherein the termination
2 network is coupled to the first input through a resistor.

1 17. The optical transmitter control circuit of claim 13, wherein the termination
2 network provides a differential pair common mode voltage signal.

1 18. The optical transmitter control circuit of claim 13, wherein the first input
2 comprises a negative input and the second input comprises a positive input.

1 19. The optical transmitter control circuit of claim 13, wherein the optical
2 transmitter input comprises a transmit enable bar input.

1 20. An optical transmitter control circuit coupled between an IEEE 1394
2 compliant physical layer output driver circuitry and a glass fiber optical physical
3 medium dependent sub-layer comprising:
4 a comparator having a negative input coupled to the output driver circuitry
5 and an output coupled to a glass fiber optical physical medium dependent sub-
6 layer transmit enable bar input;
7 a voltage divider providing a reference voltage of about half a differential
8 pair output common mode voltage to a comparator positive input; and
9 a feedback network coupled to the comparator positive input for
10 eliminating oscillation.

1 21. The optical transmitter control circuit of claim 20, wherein the comparator
2 is a high speed voltage comparator.

1 22. The optical transmitter control circuit of claim 20, wherein the output driver
2 circuitry is coupled to the negative input through a resistor.

1 23. The optical transmitter control circuit of claim 20, wherein the output driver
2 circuitry provides the differential pair output common mode voltage.

1 24. An optical transmitter control circuit comprising:
2 a comparator having a negative input coupled to a termination network
3 and an output coupled to an optical transmitter transmit enable bar input;
4 a voltage divider coupled to a comparator positive input; and
5 a feedback network coupled to the comparator positive input for providing
6 a hysteresis window.

1 25. The optical transmitter control circuit of claim 24, wherein the termination
2 network comprises an IEEE 1394 PHY TPB+/- termination network.

1 26. The optical transmitter control circuit of claim 24, wherein the comparator
2 is a high speed voltage comparator.

1 27. The optical transmitter control circuit of claim 24, wherein the termination
2 network is coupled to the negative input through a resistor.

1 28. The optical transmitter control circuit of claim 24, wherein the termination
2 network provides a differential pair common mode voltage signal.

1 29. An optical transmitter control circuit coupled between an IEEE 1394
2 compliant physical layer output driver circuitry and a glass fiber optical physical
3 medium dependent sub-layer comprising:
4 a comparator having a negative input coupled to the output driver circuitry
5 and an output coupled to a glass fiber optical physical medium dependent sub-
6 layer transmit enable bar input;
7 a voltage divider providing a reference voltage to a comparator positive
8 input; and
9 a feedback network coupled to the comparator positive input for providing
10 a hysteresis window.

1 30. The optical transmitter control circuit of claim 29, wherein the comparator
2 is a high speed voltage comparator.

1 31. The optical transmitter control circuit of claim 29, wherein the output driver
2 circuitry is coupled to the negative input through a resistor.

1 32. The optical transmitter control circuit of claim 29, wherein the output driver
2 circuitry provides a differential pair common mode voltage signal.